

**Aim:**

To explore individual and group perceptions of the issue of global warming and the factors affecting these.

**Hypothesis:**

Students from developing countries tend to associate the responsibility of global warming to developed countries.

**Justification:**

Developed countries have the higher energy consumption per capita of 4,600.1<sup>1</sup>, 3772.2<sup>2</sup> higher than developing countries. Understanding that their countries have relatively few industries and output in comparison, students from developing countries may feel that developed countries are responsible. Their production has only recently increased, yet the issue has been foreboding, as mass industrialization in the 1900s has triggered a severe rise in carbon dioxide levels. As a result, students may feel that more waste gases are released from the industries and associated goods and services that come with a richer lifestyle, hence associate the responsibility of global warming with developed countries.

**Variables:****Fixed Variables:**

The questions beings asked

The students are all from the international school

**Manipulated Variable:**

Students may be from developed or developing countries and within that category, be of different nationalities and gender. This had a large impact on the experiment, and can be affected be factors such as; even though students come from developing countries, they may have lived in a developed country for the majority of their life or vice versa. A person's gender may also have a bearing. This would therefore potentially change their mindset of which the questionnaire does not take into consideration. Hence to maintain consistency, a large group of students must be questioned, ranging from countries from Africa to India to Sweden. This will make the data as accurate as possible and make sure that each region is represented as even within their smaller nationalities, ideas are likely to differ.

**Method:**

1. Two tables were constructed, Table 1 and Table 2. Table 1 was used to record the information coming from students from developed countries. Table 2 respectively recorded that from students from developing countries.
2. The table contained questions including; how significant a problem is global warming through a ranking system, is developing or developed countries responsible and why, and finally who should pay for the solutions. This will allow us to explore and analyse the results of the hypothesis. N.B. The ranking system varies from 1 to 10, 10 being extremely significant. The answers can be divided from 0-3: Not Significant, 4-6: Quite Significant, 7-9: Very Significant, 10: Extremely Significant.
3. A representative portion of 40 members of the student body were surveyed. For each category, approximately 20 students were questioned in order to make sure that there was enough data for each category for collation purposes. Furthermore, within the categories, a variety of nationalities were chosen to ensure that all thoughts and ideas were represented and make the experiment as accurate as possible.
4. The results and observations were collated in order to understand whether students from developing countries feel that developed countries are responsible and whether students from developed countries differ in their opinion. Furthermore, specific trends within certain nationalities were observed.



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[http://earthtrends.wri.org/searchable\\_db/index.php?step=countries&ccID%5B%D=10&theme=6&variable\\_ID=351&action=select](http://earthtrends.wri.org/searchable_db/index.php?step=countries&ccID%5B%D=10&theme=6&variable_ID=351&action=select) years<sup>2</sup> Ibid.

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5. The information was represented in the form of graphs including: who is responsible for global warming, the main methods of contribution by developed and developing countries and who should pay for the solutions.
6. The reasons given of why each side is responsible was analyzed according to the results given in order to understand why responsibility is associated with each side. Therefore we can judge the main methods of contribution to global warming, and how significant the candidates felt each method was.
7. The results were then evaluated, critically analyzing their reliability, and future improvements that could be made to make the survey more meaningful and accurate.

## Results

**Table 1: Students from Developed Countries**

Nationality	How significant is global warming? (1-10)	Who is responsible?	Why developing?	Why developed?	Who should pay for the solutions?
British	2	Developed	No strict env. laws for MNCs	High energy consumption	Developed
British	3	Developed	Industrialization	Use most resources	Developed
Australian	4	Developed	Pollution	More cars	Both
Japan	8	Developed	Pollution	Industry	Developed
Canadian	8	Developing	Factories not env. friendly	Industry	Both
Italian	5	Developing	Pollute with no controls	More cars	Both
Swedish	6	Developing	Increasing industry with no controls	Use most resources	Both
British	7	Developing	Pollute with no laws to control	Refuse to sign Kyoto Protocol	Both
Dutch	7	Developed	Use a lot of fossil fuels	High energy consumption	Developed
Canadian	6	Developed	MNCs produce with lax laws	Use a lot of resources	Both
American	9	Developed	Little env. laws to control pollution	High consumption per capita	Developed
Japanese	5	Developed	Pollution	Refusal to reduce and buy carbon credits	Both
Singaporean	8	Developed	MNCs produce there	Industry	Developed
Dutch	5	Developing	Not concerned with env. laws, many factories	More cars	Both
British	7	Developed	Lax laws	Most industry	Both
Australian	8	Developed	Don't investments into solutions	High resource consumption	Both
Canadian	4	Developing	A lot of factories	More cars	Both
British	6	Developed	Pollution	Use a lot of resources	Both
British	8	Developed	MNCs given incentives to produce	Buy carbon credits rather than reduce	Developed
<b>Mean: 6</b>					



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Table 2: Students from Developing Countries

Nationality	How significant is global warming? (1-10)	Who is responsible?	Why developing?	Why developed?	Who should pay for the solutions?
Filipino	8	Developing	Lax env. policies, no recycling, fuel and cars not efficient	Most industry	Both
Indian	10	Developed	Allow MNCs to industrialize, lax laws	Most industry, oil, high energy consumption	Developed
Indian	8	Developed	Produce goods to export	Refusal to sign Kyoto Protocol	Developed
Kenyan	1	-	-	-	-
Indian	6	Developed	Sell carbon credits	Pollution	Developed
Indian	5	Developed	Industry growing	Industry	Both
Sri Lankan	4	Developed	Pollution	Industry produce CO <sub>2</sub>	China
Burmese	7	Developed	No laws of recycling	Industry	Developed
Indonesian	8	Developed	Lax laws	High energy consumption	Both
Pakistani	8	Developed	Pollution	Use a lot of resources	Developed
Thai	4	Developed	Export the most goods	Demand goods at cheap prices	Developed
Indian	8	Developed	No laws to control pollution	Produce the most CO <sub>2</sub>	Developed
Malaysian	6	Developing	High pollution	Industry	Both
Chinese	3	Developed	Pollution	Use fossil fuels	Both
Indian	7	Developed	No controls	High resource use	Developed
Indian	9	Developed	Sell carbon credits	High energy consumption	Both
Indian	6	Developing	Do not care about env.	Use a lot of resources	Both
Indian	7	Developed	High fossil fuel consumption	Produce in other countries cheaply	Developed
Indonesian	6	Developed	Industry pollutes	They demand goods	Both
Malaysian	8	Developed	A lot of factories	High resource consumption	Developed
Indian	5	Developed	Pollute, use fossil fuels	No laws to control pollution	Developed
Mean: 6					

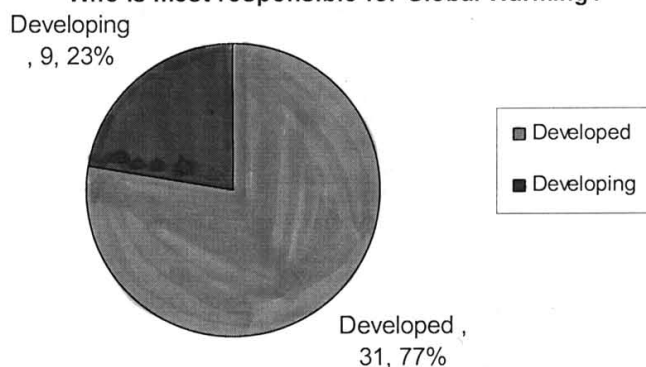


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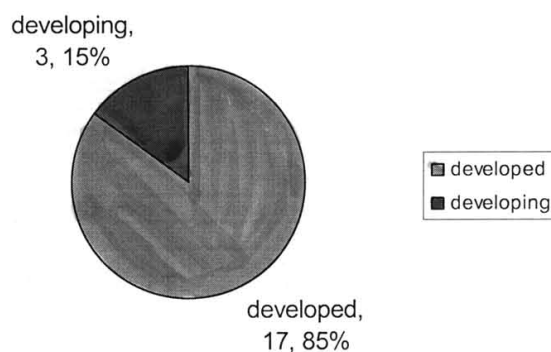
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# Graphs

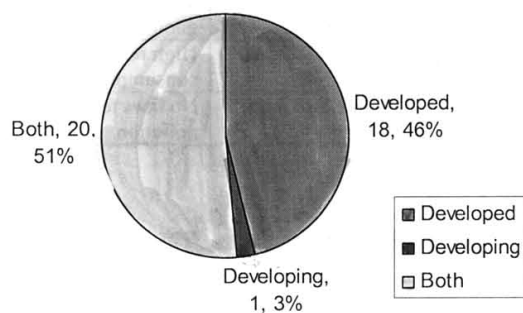
## Who is most responsible for Global Warming?



## Whom did students from developing countries feel is responsible for Global Warming?

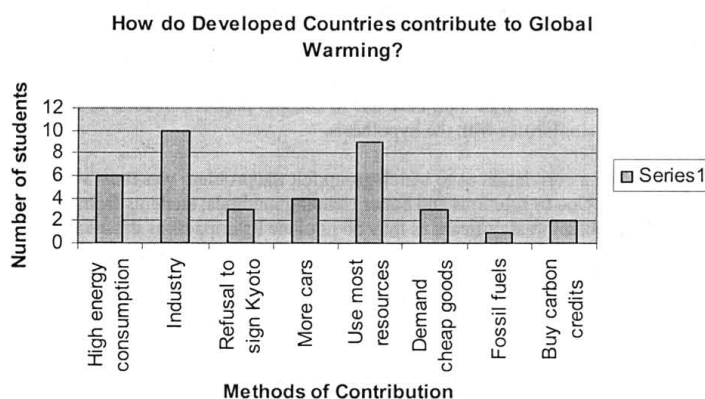
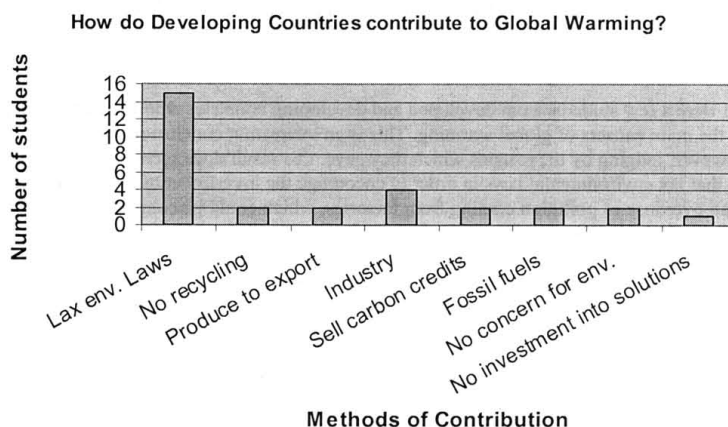


## Who should pay for the solutions?



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### Analysis

The data collected from the students, agrees with the proposed hypothesis, that in fact students from developing countries associate the responsibility of global warming on developed countries. This can be seen from the fact that 85 percent of the students from developing countries that were questioned, felt that developed countries were the most responsible.

However, students from developed countries were also questioned to provide a comparison, and the fact that 68 percent of their population also felt that developed countries were to blame, illustrates that this mentality is one which is shared amongst the student body, rather than with just one particular group. This is important as whilst the hypothesis is proved correct, it shows that this is not a distinct view shared only by students from developing countries. One interesting explanation is that those whom were questioned are educated and therefore did not have a biased one-sided viewpoint.

The reasons why responsibility was owed to developed countries were also expressed in the survey and the main aspects were the fact that developed countries had the highest energy consumption, which led to them demanding the most resources. This was recognized by both groups of students, and is definitely a viable contribution. The high resource use requires fossil fuels, one of the largest contributors to carbon dioxide; a greenhouse gas. Most students also stated that developed countries should be the ones who pay for the solution,



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and this could be for two major reasons. Most whom said that they should also agreed that they were the most responsible, however they may also have suggested that developed countries lead the financial path to solutions because they can, and they have the resources to do so.

However, there were a few students from developed and developing countries who felt that developing countries were the main causers of global warming. This is an interesting conclusion, as it goes against the hypothesis. However, judging by the reasons which they gave, this result does seem justified, as the majority of students felt that lax environmental laws in order to encourage the investment of multi-national companies, meant there is an overdose of pollution coming from factories, which could be controlled. They further extend the argument of the developed countries involvement through stating that it is them who demand the cheap goods, therefore encouraging the developing countries to reduce their costs of production. However, only one student, even those which attributed responsibility to the developing countries felt that they should take sole responsibility in paying for the solutions. This student however was an anomaly. This can be again because they understand that developing countries lack the financial means to do so, and it would detract from their priority of increasing the people's welfare, or that they realize the immense contribution developed countries have on the actions of the less developed countries.

Another interesting point to consider is the similarities in the ideas of specific nationalities. This was especially apparent from *Table 2* as nine out of ten Indians felt that developed countries were responsible. This is ironic considering the United States excuse of not ratifying the Kyoto Protocol because of the growth of such countries, and the fact that their industries are the cause for concern in their emissions of carbon dioxide. However, the Indian students may feel that they in comparison are limited in their development of this secondary stage of the economy, or that many of the production facilities in India are established by those of developed countries, who choose India to be their base due to cheaper production costs or laxer controls. Their mentality therefore has strong similarities with the hypothesis.

I predicted that there would be a correlation as to which group felt the problem was most significant, and it could have floated either way. Due to solutions and better cleaning methods, students from develop countries may not have regarded the problem as significant as they do not face its impacts as drastically as others. However, due to their education, and the fact that many countries, especially those in the European Union, have stressed its importance, they may also have thought it to be extremely significant. Similarly with developing countries, they may have felt that the problem was not particularly significant as there are more important aspects to deal with such as economic development. However, no such correlation was found, and each group had quite varied results in this field. In fact their means in this field was an equal six. There was an anomaly however as a Kenyan felt that global warming was not at all significant, rating it only one. This however cannot be analyzed as only one African was questioned. This however, could have provided a key contribution to the hypothesis, as if students from developing countries did not realize how significant it was, it could have conveyed that they felt the problem mainly lay with developed countries, and it did not affect them.

### Conclusion

In conclusion, although the data accepted the hypothesis, I cannot fully agree with it, as it is not a distinct view held by students from developing countries, but rather that the majority of the student body was in favour of developed countries holding responsibility. Perhaps it is due to the fact that they have been educated, and therefore understand both points of views which they can weigh in order to judge which is most significant. This can be seen through their insight given through the methods of contribution, as it is then understood that they feel that developed countries are contributing through industry and high energy consumption, but also in the actions of developing countries, as they are encouraged through lax laws or demand cheap goods or costs of production. However, we cannot avoid the numerous students who felt that developing countries were the most responsible, as they were not controlling their pollution, and perhaps their scale of industry especially in countries such as India and China are much larger than many of the developed countries whom have now begun to specialize in the more profitable tertiary sector. On a whole though, it is largely justified by the whole questioned student body, that developed countries are responsible.



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### Evaluation

Whilst we were able to reach a fair and justified conclusion, there are many aspects which we could have improved. Firstly, only 40 students were represented in the survey. Therefore, if we were to collate more accurate results as to the actual mentality of the student body, more people should have been questioned. For example only one African from Kenya was questioned and gave an interesting response, as they felt that global warming was not significant, rating it only 1 on the scale. However, it was hard to analyze or justify, as they could have been a rare anomaly, having a completely distinct opinion from others. Yet equally, this may have been a common African mentality. In future not only a broader range is needed but also an increase in the number of people representing certain regions. Furthermore, to widen the survey, students from other schools can also be questioned.

Furthermore, the questionnaire separated them based on their nationality as to whether they were from a developed or developing country. However, many of these third-culture kids have lived in other countries and may therefore have adopted their mentality which could have affected the results. Although this problem was attempted to be avoided through asking a broader range, the 40 students was still not sufficient. To improve this aspect a more detailed questionnaire could be developed, which specifies for example, the country they have lived in longest or most recently.

Also, random members of the student body were picked, however it is hard to judge how much they actually knew about global warming and its causes. Therefore, many of the students said pollution as to why developed or developing countries are responsible, but failed to specify the source of the pollution and therefore whether it was in fact a greenhouse gas. This may also have affected how significant they thought global warming was, as they may not have been aware of the debate and different philosophies present. In future a short test could be developed that questions the candidates' knowledge of global warming. This could ensure that the results given by the candidate is reliable and accurate.



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